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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/110,830	04/21/2005	Hideo Ukuda	03500.017520.1	4116

5514 7590 06/13/2005

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER	
STULTZ, JESSICA T	

ART UNIT	PAPER NUMBER
2873	

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	11/110,830	UKUDA, HIDEO	
	Examiner	Art Unit	
	Jessica T. Stultz	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/647,275.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *0405*.
4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Double Patenting

Claim 1 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 14 of copending Application No. 10/647,275 (US PGPUB 2004/0051949). Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 14 discloses a laminated diffractive optical element comprising: a first diffractive optical element having a surface formed into a diffractive shape and a second diffractive optical element having a surface formed into a diffractive shape, wherein the first optical element is made of an optical material that satisfies the claimed conditions of the refractive index at the d-line, the Abbe number at the d-line, and a second order dispersion at the d-line; wherein the second optical element has an Abbe number larger than the first diffractive optical element; and the diffracting surface of the first optical element and the diffracting surface are arranged in an opposite position.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ogawa.

Regarding claim 1, Ogawa discloses a laminated diffractive optical element comprising: a first diffractive optical element having a surface formed into a diffractive shape; and a second diffractive optical element having a surface formed into a diffractive shape (Column 19, line 41-Column 20, line 13, wherein the first diffractive element is "105" and the second diffractive element is "104", Figures 21 and 24), wherein the first diffractive optical element is made of an optical material that satisfies the claimed conditions of the refractive index at the d-line, the Abbe number at the d-line (Column 19, lines 41-51, wherein the refractive index and Abbe number of diffractive element "105" satisfies the claimed conditions, Figures 21 and 24), and a second order dispersion at the d-line (Column 12, lines 29-67, wherein the second order dispersion, i.e. θ_{gF} is less than either 0.61 or less than preferably less than 0.591 for negative lenses in the optical system, wherein the Abbe numbers for negative lenses fall between 27 and 50, therefore fulfilling the required conditions, see conditions 6-8); wherein the second diffractive optical element has an Abbe number greater than that of the first diffractive optical element (Column 19, lines 41-51, wherein the second diffractive element "104" has an Abbe number greater than the first diffractive element "105", Figure 21); and wherein the diffracting surface of the first diffractive optical element and the diffracting surface of the second diffractive optical element are arranged opposite each other (Figure 24).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of Hisatake et al.

Regarding claims 2-4, Ogawa discloses an optical material as shown above, wherein the diffraction grating is made of a polymer (Column 19, lines 24-51, wherein the grating comprising components "104" and "105" are made of a UV curable polymer, Figure 21) having a second order dispersion value of 0.45 or less (Column 12, lines 29-67, wherein the second order dispersion, i.e. θ_{gF} is less than either 0.61 or less than preferably less than 0.591 for negative lenses in the optical system, see conditions 7-8), but does not specifically disclose that the optical material comprises an inorganic nanoparticle material, specifically transparent ITO, or that the polymer is made of polystyrene. Hisatake et al teaches of a diffraction grating made of polystyrene (Column 16, lines 50-65, wherein the liquid crystal display includes a light diffusing layer that forms a diffraction grating made of polystyrene) which includes inorganic ITO particles (Column 17, line 47-Column 18, line 5, wherein the light diffusing layer includes fine particles of ITO) for the purpose of providing a diffusing layer with materials of different refractive indices to enhance diffusion (Column 17, line 47-Column 18, line 5). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made for the optical material of Ogawa to comprise an inorganic nanoparticles material, specifically transparent ITO, wherein the polymer is made of polystyrene since Hisatake et al teaches of a diffraction grating made of polystyrene which includes inorganic ITO particles for the purpose of providing a diffusing layer with materials of different refractive indices to enhance diffusion.

Regarding claims 6-8, Ogawa discloses a laminated diffractive optical element comprising: a first diffractive optical element having a surface formed into a diffractive shape; and a second diffractive optical element having a surface formed into a diffractive shape (Column 19, line 41-Column 20, line 13, wherein the first diffractive element is "105" and the second diffractive element is "104", Figures 21 and 24), wherein the first diffractive optical element is made of an optical material that comprises a polymer (Column 19, lines 24-51, wherein the grating comprising components "104" and "105" are made of a UV curable polymer, Figure 21), which reduces the second order dispersion of the first diffractive optical element (Column 12, lines 29-67, wherein the second order dispersion, i.e. θ_{gF} is less than either 0.61 or less than preferably less than 0.591 for negative lenses in the optical system, see conditions 7-8); wherein the second diffractive optical element has an Abbe number greater than that of the first diffractive optical element (Column 19, lines 41-51, wherein the second diffractive element "104" has an Abbe number greater than the first diffractive element "105", Figure 21); and wherein the diffracting surface of the first diffractive optical element and the diffracting surface of the second diffractive optical element are arranged opposite each other (Figure 24), but does not specifically disclose that the optical material comprises an inorganic nanoparticle material, specifically transparent ITO, or that the polymer is made of polystyrene. Hisatake et al teaches of a diffraction grating made of polystyrene (Column 16, lines 50-65, wherein the liquid crystal display includes a light diffusing layer that forms a diffraction grating made of polystyrene) which includes inorganic ITO particles (Column 17, line 47-Column 18, line 5, wherein the light diffusing layer includes fine particles of ITO) for the purpose of providing a diffusing layer with materials of different

refractive indices to enhance diffusion (Column 17, line 47-Column 18, line 5). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made for the optical material of Ogawa to comprise an inorganic nanoparticles material, specifically transparent ITO, wherein the polymer is polystyrene since Hisatake et al teaches of a diffraction grating made of polystyrene which includes inorganic ITO particles for the purpose of providing a diffusing layer with materials of different refractive indices to enhance diffusion.

Regarding claims 5 and 9, Ogawa and Hisatake et al disclose and teach of an optical material as shown above and it is further inherent from Hisatake et al that the size of the transparent material is 2 to 50 nm, this being reasonably based upon the particles being disclosed as fine particles (Column 17, line 47-Column 18, line 5) within a diffusion layer having very small thickness, specifically 0.1 to 0.4 micrometers (Column 16, lines 50-65).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hayakawa et al and Nakayama et al are cited as having some similar structure to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica T. Stultz whose telephone number is (571) 272-2339. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jessica Stultz
Patent Examiner
AU 2873
June 8, 2005

JORDAN SCHWARTZ
PRIMARY EXAMINER

FORM PTO 1449 (*modified*)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

LIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

ATTY DOCKET NO.	APPLICATION NO.
03500.017520.1	10/110,838 ~~Div. of 10/647,275~~
APPLICANT: Hideo Ukuda	
FILING DATE: 4/21/05 ~~Filed Herewith~~	GROUP: 2873 ~~N.Y.A.~~

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		6,480,332 B1	11/12/02	Nakai	359	566	
		6,262,846 B1	07/17/01	Nakai	359	576	
		6,157,488	12/05/00	Ishii	359	569	
		2004/0042102 A1	03/04/04	Ukuda	359	883	
		6,381,079 B1	04/30/02	Ogawa	359	795	
		6,188,522 B1	02/13/01	Kimura et al.	359	649	
		6,061,110	05/09/00	Hisatake et al.	349	113	
		2003/0231396 A1	12/18/03	Nakai	359	569	

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO/ OR ABSTRACT
	JP	11-44810	02/16/99	Japan			Abstract
	JP	11-44808	02/16/99	Japan			Abstract
	JP	9-127321	05/16/97	Japan			Abstract
	JP	9-127322	05/16/97	Japan			Abstract
	EP	1 065 531 A2	01/03/01	Europe			

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

	Michael W. Farn et al., "Diffractive Doublet Corrected On-Axis at Two Wavelengths," 1354 SPIE 24-29(1990).
	Carmiña Londoño et al., "The Design of Achromated Hybrid Diffractive Lens Systems," 1354 SPIE 30-37 (1990).
	Ivan D. Nikolov et al., "Optical Plastic Refractive Measurements in the Visible and Near-Infrared Regions," 39(13) Applied Optics 2067-70 (May 2000).

EXAMINER: [signature] DATE CONSIDERED 6/8/05

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Sheet 1 of 1

Form #62

NY_MAIN 495578v1

Notice of References Cited	Application/Control No. 11/110,830	Applicant(s)/Patent Under Reexamination UKUDA, HIDEO	
	Examiner Jessica T. Stultz	Art Unit 2873	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-2004/0051949	03-2004	Ukuda, Hideo	359/576
	B	US-6,606,200	08-2003	Nakayama et al.	359/686
	C	US-6,144,502	11-2000	Hayakawa et al.	359/726
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.